

# Back-UPS<sup>®</sup> ES 350/500

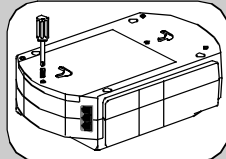
## User's Guide

### 1 Connect Battery

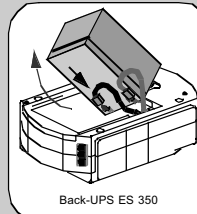
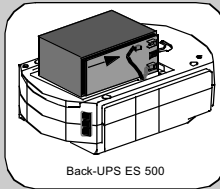
The Back-UPS ES is shipped with one battery wire disconnected in compliance with Department of Transportation (DOT) regulations. The Back-UPS ES will not operate until the wire is connected to the touch safe battery terminal.

NOTE: Small sparks may occur during battery connection. This is normal.

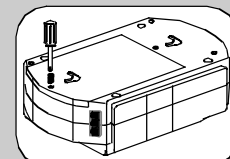
- 1** TURN the Back-UPS ES over and remove the battery compartment cover screw using a flat blade or Phillips-head screwdriver.



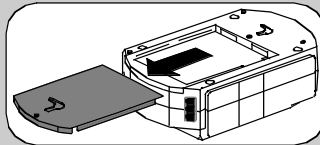
- 3** LIFT the battery out of the compartment and connect the black wire to the battery terminal.



- 4** Replace the battery, battery compartment cover and cover retaining screw.



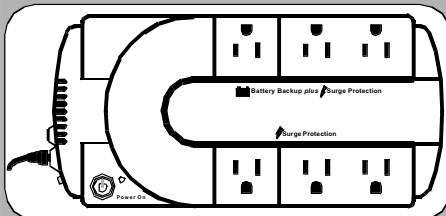
- 2** Slide the battery compartment cover completely off of the Back-UPS ES.



### 2 Connect Equipment

#### Battery Back-up plus Surge Protection

These outlets are powered whenever the Back-UPS ES is switched ON. During a power outage or other utility problems (brownouts, over-voltages), these outlets will be powered for a limited time by the Back-UPS ES. Plug your computer, monitor, and one other data-sensitive device (external disk or tape drive) into these outlets.

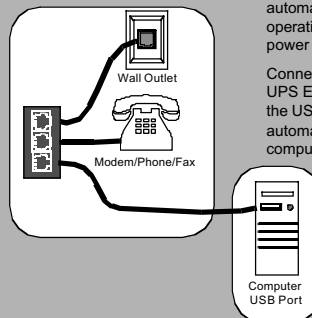


#### Surge Protection

These outlets provide full-time protection from surges even if the Back-UPS ES is switched OFF. Plug your printer, fax machine, scanner, or other peripherals that do not need battery power into these outlets.

#### Connect FAX/Modem/Phone

Back-UPS ES protects a single line (2-wire) fax, modem or phone from surges when it is connected through the Back-UPS ES as shown.



#### Place the Back-UPS ES to avoid:

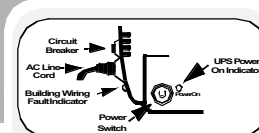
- Direct sunlight
- Excessive heat
- Excessive humidity or contact with fluids

**Plug the Back-UPS ES power cord directly into a wall outlet; not a surge protector or power strip.**

#### Connect Computer Cable

The supplied cable and software provide automatic file saving and shutdown of the operating system in the case of a sustained power outage.

Connect the cable to the Data Port of the Back-UPS ES. Connect the other end of the cable to the USB port on your computer. The software will automatically find the USB Port of your computer.



### Status Indications

The Back-UPS ES indicates operating status using a combination of visual and audible indicators.

Status	Visual Indications	Audible Indication	Alarm Terminates When
<b>On Line</b> - UPS is supplying conditioned utility power to the load	Power On LED - ON	None	n/a
<b>On Battery</b> - UPS is supplying battery power to the load connected to the Battery outlets	Power On LED - ON (off during beep)	Beeping 4 times every 30 seconds	UPS transfers back to On Line operation, or when UPS is turned off.
<b>Low Battery Warning</b> - UPS is supplying battery power to the load connected to the Battery outlets and the battery is near exhaustion	Power On LED - Flashing	Rapid beeping (one second intervals)	UPS transfers back to On Line operation, or when UPS is turned off.
<b>Replace Battery</b> - Battery needs to be checked and/or replaced, or battery is not connected	Power On LED - Flashing	Constant tone	UPS turned off with the power switch.
<b>Overload Shutdown</b> - During On Battery operation a battery power supplied outlet overload was detected.	Power On LED - OFF	Constant tone	UPS turned off with the power switch.
<b>Sleep Mode</b> - During On Battery operation the battery power has been completely exhausted and the UPS is waiting for utility power to return to normal.	Power On LED - OFF	Beeping once every 4 seconds	UPS transfers back to On Line operation, or when UPS is turned off.
<b>Building Wiring Fault</b> - Your building wiring presents a shock hazard that should be corrected by a licensed electrician.	Building Wiring Fault LED (red) - ON	None	UPS is unplugged, or plugged into a properly wired outlet.

See the Troubleshooting section for additional assistance.

### 3 Power On and Install Software

**Press the ON/OFF switch to power the unit ON.**

A single short beep and the green "Power On" indicator confirms that Back-UPS ES is on and ready to provide protection.

The Back-UPS ES should charge for at least 16 hours to ensure sufficient runtime. The unit is being charged whenever it is connected to utility power, whether the unit is turned ON or OFF.

If the red Building Wiring Fault indicator (located on the end near the power cord) is lit, your building wiring presents a shock hazard that should be corrected by a qualified electrician.

#### Install the PowerChute Personal<sup>®</sup> Edition software

Place the PowerChute Personal Edition CD-ROM into your computer and follow the installation instructions on the screen.

## Troubleshooting

Use the table below to solve minor Back-UPS ES installation or operation problems. Consult APC Online Technical Support or call APC Technical Support for assistance with problems that cannot be resolved using the table below:

Problem	Probable Cause	Solution
Back-UPS ES will not turn on.	Battery is disconnected and utility power is not available at the wall outlet.	Connect the battery (see <i>Connect Battery</i> ) and ensure power is available at the wall outlet.
No power available at the Surge Protection outlets.	Surge Protection outlets have been overloaded.  Utility power not available at the wall outlet.	Reduce the amount of equipment plugged into Surge Protection outlets.  Ensure that the fuse or circuit breaker for the outlet is not tripped, and that the wall switch controlling the outlet (if any) is in the ON position.
Connected equipment loses power.	Equipment is connected to the "Surge Protection" outlets.  The Back-UPS ES is overloaded.  PowerChute Personal Edition software has performed a shutdown due to a power failure.  The Back-UPS ES has exhausted its available battery power.  Connected equipment does not accept the step-approximated sine waveform the Back-UPS ES.  The Back-UPS ES may require service.	Ensure that the equipment you want to stay powered during a power failure is plugged into the "Battery Backup plus Surge Protection" outlets and NOT the "Surge Protection" outlets.  Make sure that the equipment plugged into the outlets of the unit are not overloading the capacity of the unit. Try removing some of the equipment and see if the problem continues.  The Back-UPS ES is operating normally.  The Back-UPS ES can only operate on battery power for a limited amount of time. The unit will eventually turn off when the available battery power has been used. Allow the unit to recharge for 16 hours before continuing use of the unit.  The output waveform is designed for computers and computer-related equipment. It is not designed for use with motor-type equipment.  Contact APC Technical Support for further troubleshooting.
The Power On indicator is lit and the Back-UPS ES is beeping four times every 30 seconds.	The Back-UPS ES is using battery.	The Back-UPS ES is operating normally and using battery power. Once On Battery, you should save your current work, power down your equipment, and turn the unit OFF. Once normal power is restored, you may turn the unit back ON and power your equipment.
The Power On indicator flashes once per second and the Back-UPS ES beeps once per second at the same time.	Battery capacity is low (about 2 minutes of use remaining).	The Back-UPS ES is about to shut off due to a low battery charge condition! When the unit beeps once every second, the battery has about 2 minutes of power remaining. Immediately power down your computer and turn the unit OFF. When normal power returns, the unit will recharge the battery.
Building Wiring Fault indicator is lit.	Your building wiring presents a shock hazard. Using the Back-UPS with this condition will void the warranty.	Call a qualified electrician for service.
Inadequate runtime.	The battery is not fully charged.  Battery is near the end of useful life.	Allow the unit to charge by leaving it plugged into the wall at least 16 hours.  As a battery ages, the amount of runtime available will decrease. You can replace the battery by ordering one at <a href="http://www.apc.com">www.apc.com</a> . Batteries also age prematurely if the Back-UPS ES is placed near excessive heat.

## Specifications

Model	BE350U	BE500U
Input	Voltage	120 Vrms Nominal
	Frequency	47 - 63 Hz
	Brownout Transfer	96 Vrms, typical
	Over-voltage Transfer	136 Vrms, typical
Output	UPS Capacity (3 outlets)	350 VA / 200 W
	Surge Capacity (6 outlets)	12 Amps (including UPS output)
	Voltage	115 Vrms $\pm$ 8% (step-approximated sine wave)
	Frequency - On Battery	50-60 Hz $\pm$ 1 Hz
	Transfer Time	5 ms typical, 8 ms maximum
Protection and Filter	AC Surge Protection	Full time, 375 joules
	Telephone Surge Protection	Single line (2-wire)
	EMI/RFI Filter	Full time
	AC Input	Resettable circuit breaker
Battery	Type	Sealed, maintenance-free lead acid
	Average Life	2 - 4 years depending on the number of discharge cycles and environmental temperature
Physical	Net Weight	9.20 lb. (4.18 kg.)
	Size	3.3" (H) x 10.9" (W) x 6.9" (D) (8.3 x 27.8 x 17.5 cm)
	Operating Temperature	+32°F to 104°F (0°C to 40°C)
	Storage Temperature	+5°F to 113°F (-15°C to 45°C)
	Operating Relative Humidity	0 to 95% non-condensing
	Operating Elevation	0 to 10,000 ft (0 to 3,000m)
	Safety Approvals	UL 1778 listed, cUL certified per CSA standard C22.2 No. 107.1
Safety/Regulatory	EMC Compliance	FCC part 68, FCC part 15 Class B Notice: This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

## Order Replacement Battery

Replace with an APC qualified battery. Replacement batteries can be ordered from [www.apc.com](http://www.apc.com) (valid credit card required). Have your Back-UPS ES model number available when ordering. Your model number can be found on the bottom of the unit.

## Warranty

The standard warranty is 2 years from the date of purchase. APC's standard procedure is to replace the original unit with a factory reconditioned unit. Customers who must have the original unit back due to assigned asset tags and set depreciation schedules must declare such a need at first contact with APC Technical Support. APC will ship the replacement unit once the defective unit is received by the repair department or cross-ship upon the provision of a valid credit card number. The customer pays for shipping to APC, and APC pays ground freight transportation costs back to the customer.

## Service

Please DO NOT RETURN Back-UPS ES to the place of purchase under any circumstances.

1. Consult the Troubleshooting section to eliminate common problems.

2. Verify the battery is connected (see *Connect Battery*) and that the Circuit Breaker is not tripped (see *Troubleshooting* section).

If you still have problems or questions, please contact APC via the internet or at one of the phone numbers listed below.

3. Before contacting APC, please be sure to record the date purchased, UPS model, and serial number (on bottom of unit).

4. Be prepared to troubleshoot the problem over the telephone with a Technical Support Representative. If this is not successful, the representative will issue a Return Material Authorization Number (RMA#) and a shipping address.

Pack the unit in its original packaging. If the original packaging is not available, ask APC Technical Support about obtaining a new set. Pack the unit properly to avoid damage in transit. Never use foam beads for packaging. Damage sustained in transit is not covered under warranty (insuring the package for full value is recommended).

5. Write the RMA# on the outside of the package.

6. Return the unit by insured carrier to the address given to you by APC Technical Support.

## APC Contact Information

Online Technical Support . . . . <http://support.apc.com>

Web Site . . . . . [www.apc.com](http://www.apc.com)

USA/Canada . . . . . 1.800.800.4272

Mexico . . . . . +52.292.0253 / 52.292.0255

Brazil . . . . . +0800.12.72.1

Worldwide . . . . . +1.401.789.5735

